

# RESEARCH NOW

## Feeding Availa®Z/M to Tom Turkeys Improved Their Performance and Leg Quality (less leg problems)

### Introduction:

Previous research has shown that feeding complexed zinc and manganese to Tom turkeys has resulted in improved walking score and bone strength. This experiment was conducted to look at the effect of zinc and manganese source and level, on performance, carcass quality and leg quality.

### Results:

Source and level of zinc and manganese did not affect ( $P > 0.10$ ) the following parameters:

- Breast meat weight
- Skin tears or scratches
- Breast blisters
- Mortality

However, replacement of sulfate forms with Availa-Z/M improved the following parameters:

- Live weight ( $P < 0.05$ )
- Chill weight ( $P < 0.05$ )
- Adjusted feed conversion ( $P < 0.05$ )
- Percentage of leg problems ( $P = 0.05$ )

### Trial Design & Duration:

- 528 Toms (Nicholas)
- 0-19 wk of age
- Toms allocated to 4 Treatments
- 12 replicates per treatment

### Treatments:

- Low = 65 ppm zinc from  $ZnSO_4$  plus 60 ppm manganese from  $MnSO_4$
- High = 110 ppm zinc from  $ZnSO_4$  plus 110 ppm manganese from  $MnSO_4$
- Low and High Treatments as described above vs. replacement of 40 ppm zinc and 40 ppm manganese from Availa®Z/M in each Low and High sulfate diet.

### Conclusion:

Data from this experiment indicate that the addition of Availa-Z/M to Tom turkey diets improves performance and leg quality.



# ABSTRACT

**114 Effect of Zinc and Manganese Amino Acid Complexes (Availa®Z/M) on Tom Turkey Performance and Leg Quality.** S. W. Davis<sup>1</sup>, B. A. George<sup>1</sup>, C. L. Quarles<sup>1</sup>, T. L. Ward<sup>1\*2</sup>, C. J. Rapp<sup>2</sup>, and T. M. Fakler<sup>2</sup>. <sup>1</sup>Colorado Quality Research, Wellington, CO, <sup>2</sup>Zinpro Corp., Eden Prairie, MN.

Five hundred twenty-eight toms (Nicholas, 0 to 19 wk of age) were used to determine the effect of dietary Zn and Mn source and level on performance, carcass quality and leg quality. Toms were allocated randomly to one of four dietary treatments, with 12 replicates per treatment. Diets were fed from 0 to 19 wk of age. The experiment was designed and data analyzed as a 2 x 2 factorial arrangement of treatments with main effects of level (low and high) and source (inorganic or inorganic combined with complexed Zn and Mn). Levels of Zn and Mn were 65 ppm Zn and 60 ppm Mn in the low level supplementation and 110 ppm Zn and 110 ppm Mn in the high level supplementation treatments. Source effects were determined by using an all sulfate inorganic treatment or a complexed treatment with 40 ppm Zn and 40 ppm Mn replacement by complexed sources (Availa®Zn and Availa®Mn, Zinpro Corp.). There were no interactions ( $P > 0.10$ ), so only main effect means are presented. Source and level of Zn and Mn did not affect ( $P > 0.10$ ) breast meat weight, skin tears, skin scratches, breast blisters or mortality. Replacement of 40 ppm Zn and 40 ppm Mn with complexed sources improved ( $P < 0.05$ ) live weight (16.51 vs 16.08 kg) chill weight (13.5 vs 13.2 kg) and adjusted feed conversion (2.33 vs 2.37 kg feed/kg gain). At 16 wk of age, all birds were walked and leg quality observed. The number of birds with mechanical, infectious, shaky, tibial dyschondroplasia, osteomyelitis or varus/vulgus leg problems were noted and recorded. Replacement of 40 ppm Zn and 40 ppm Mn with complexed sources decreased ( $P = 0.05$ ) the percentage of toms with leg problems (9.3 vs 15.2%). These data indicate that addition of complexed Zn and Mn to tom turkey diets improves performance and leg quality.

**Key Words:** Turkey Production, Zinc, Manganese, Leg Quality

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